

REMARKS

The present application includes 44 claims although claims 9-11, 16, 17, 31-33, 35, 36, 40 and 41 were withdrawn in response to a restriction requirement. Applicants have cancelled withdrawn claims 16-17, 31-33, 35, 36, 40 and 41 because their parent claim 28 has been cancelled without prejudice to consideration in a continuing application. However, withdrawn claims 9-11 have been retained because claim 1 is generic to these claims.

Applicants have cancelled claims 6, 12 and 27 because their respective limitations have essentially been incorporated into their corresponding parent claims. Applicants have also cancelled claims 15, 28-30, 34, 37-39 and 42-44 without prejudice to consideration in a continuing application. Independent claims 1 and 23 have been amended to essentially incorporate the limitations in their corresponding dependent claims 6, 12 and 27. Claims 2-5, 7, 8, 13, and 24-26 have been amended to comply with the changes in claims 1 and 23. Claim 18 has been amended to place it in independent form, incorporating the limitations of original claim 1.

Original claims 1 and 23 were rejected as anticipated by either the patent to Fischer et al. or the patent to Beller. With respect to Fischer, this reference fails to disclose a flow modifying element of any type in the passageway. The valve head 50 in the Fischer device is outside the passageway 28, not in or within the passageway. The valve head 50 is in the form of a flapper valve that prevents flow in one direction by bearing against valve seat 48 and permits flow in the opposite direction as the flow pushes the head away from the valve seat. Fischer only contemplates a flapper-type flow control valve and neither discloses nor suggests incorporating that valve in or within the passageway. To the extent that the language "in said passageway" has been interpreted to permit an element that is outside the passageway, Applicants have amended claim 1 to indicate that the element is "within" the passageway. This term comports with the disclosure of this application in which the flow modifying element is clearly

situated inside the elongated body and within the passageway. A similar amendment has been made to independent claim 23.

The Beller reference was cited for its disclosure of spike-shaped "mixing elements 3" that are helically arranged within the mixing chamber Col. 2, ll. 25-33; col. 4, ll. 22-25; FIG. 2. Contrary to the suggestion in the Office Action, the spikes 3 are not "nozzles." This term has been used in the present application in accordance with its accepted meaning, namely a feature that increases fluid velocity (such as the nozzle of a rocket or a water hose). Nozzles incorporate a significant reduction in flow area in order to capitalize on the Bernoulli principle. The "mixing elements" in Beller are not themselves nozzles, nor do they form a nozzle individually or collectively. Beller describes the elements as being helically disposed and having sharp "separation" edges in the direction of the fluid flow. Col. 2, ll. 25-33. The purpose of the spikes in Beller is to "separate" the fluid flowing past, with the ultimate object being to mix a gas with a liquid. Beller does not describe or contemplate increasing the velocity of either the gas or the liquid passing through the mixing chamber. Accordingly, Beller does not disclose or contemplate a nozzle within the mixing chamber. In contrast to Beller's expressed object of the spikes to "separate" the flow, a nozzle concentrates the flow as it passes through the reduced flow area. Thus, a nozzle is directly contrary to the specific purpose of the helically disposed spikes in Beller.

Applicant has amended claims 1 and 23 to recite the apparatus as including at least one nozzle configured to increase the flow velocity therethrough. Neither Fischer nor Beller disclose or contemplate a nozzle within a syringe-to-syringe mixing apparatus. Thus, it is believed that independent claims 1 and 23, along with their respective dependent claims 2-5, 7, 8, 13, 14 and 24-26, are patentable over the art of record.

Applicant has amended claim 18 to incorporate the limitations of original claim 1 and place it in independent form. Claim 18 was rejected as obvious in view of the combination of the patents of Beller and Lake. Lake was cited as

disclosing a fluid mixing device having a sealed orifice 26. It was further suggested that Lake discloses a self sealing orifice. The combination of the Belle and Lake references does not show every limitation of original dependent claim 18. In particular, claim 18 states that the orifice is "defined in said body" and in communication with the passageway "between said opposite ends thereof." In Lake the ports 26 and 27 are formed in the end of the reservoirs 12, 14, not between the opposite ends of the mixing passageway 16. Lake specifically states that "fluid port 26 [27] is included on reservoir 14 [12] proximate where reservoir 14 [12] joins with mixing passageway 16." Col. 2, ll. 59-63. The ports are used "to inject or withdraw fluid into or out of reservoirs 14 and 12." Col. 2, ll. 63-64.

Since the addition of Lake to Beller fails to show every element of claim 18, this claim is believed to be allowable over the art of record. The same combination of references was used to reject claims 19-22 which depend from allowable claim 18; however, Lake fails to disclose every limitation of these dependent claims. For instance, claim 20 calls for a valve covering the recited orifice. Although the cited excerpt from Lake (col. 3, ll. 49-50) indicates that the ports 26, 27 can be sealed, Lake does not describe any structure used to produce this sealing. Given the construction of the ports 26, 27 it is logical to assume that Lake simply contemplates a plug. More significantly, there is nothing in Lake to suggest placing a valve at the opening of each port 26, 27. Since neither Beller nor Lake discloses or suggests a valve, this combination cannot render obvious Applicants' claim 20.

Dependent claim 21 further defines the valve as a septum, while claim 22 indicates that the septum is formed of a self-sealing material. There is absolutely no disclosure in Lake of a septum or of a self-sealing material. Thus, these claims cannot be rendered obvious by the combination of Beller and Lake.

In view of the foregoing amendments and arguments, it is believed that this application, including claims 1-5, 7-11, 13, 14 and 18-26, is in condition for allowance. Action toward that end is requested. The Examiner is invited to contact the undersigned if it is believed that a telephonic interview would be helpful to address any remaining issues.

Respectfully submitted,

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